

*To the chairman of the Scientific Jury,  
Appointed by order of the  
Rector of the Medical University – Varna  
№ P-109-208/12.05.2022*

## **REVIEW**

*By Prof. Anton Yordanov Djorov, DMD, PhD, DSc  
Acibadem City Clinic, Multidisciplinary Hospital for Active Treatment Tokuda EAD,  
Specialist in “General Dentistry”, “Oral Surgery”, “Maxillofacial Surgery”*

**Subject:** Dissertation for awarding the educational and scientific degree “Doctor” in the scientific specialty “Oral Surgery” in the field of higher education 7. Health and sports in professional field 7.2. Dental Medicine at the Department of “Oral and Maxillofacial Surgery”, Faculty of Dental Medicine, Medical University - Varna

**Topic:** “Application of dental lasers for treatment of patients in oral surgery”

**Author:** Dr. Velimira Hristova Georgieva, assistant professor at the Department of “Oral Surgery”, Faculty of Dental Medicine, Medical University of Varna

**Scientific supervisor:** Prof. Tihomir Georgiev, DMD, PhD, DSc

### **1. Biographical data**

Dr. Velimira Hristova Georgieva graduated from the Faculty of Dental Medicine at Medical University “Prof. Dr. Paraskev Stoyanov” Varna in 2017.

In 2018 Dr. Georgieva was selected as an assistant professor in the Department of “Oral Surgery” at the Faculty of Dental Medicine, Medical University of Varna, where she is still currently working.

She acquired the specialty “Oral Surgery” in 2022.

### **2. Relevance of the topic of the dissertation**

In Oral surgery laser treatment is a relatively new method, which is an alternative to standard surgical procedures. Nonetheless, its application is still limited due to the high cost of equipment and lack of convincing evidence, as well as the advantages it offers. Of particular interest is also the quality of life in the postoperative period, which in contemporary medicine is an important element when assessing the treatment outcomes. This makes the subject of application of dental lasers in the clinical practice actual and significant.

### **3. Characteristics and assessment of the dissertation**

The dissertation work of Dr. Velimira Georgieva is written in 189 standard typewritten pages. It is illustrated with 70 figures and 69 tables. The bibliography consists of 158 sources, all of which in English.

In the literature review a variety of surgical interventions performed with dental lasers on soft tissues and bony structures have been regarded. The technical characteristics and features of different devices and the methods of working with them have been described. The matter of the quality of life of patients after the surgical laser treatment has also been considered. Sadly, the research of Bulgarian authors on the issue has not been reflected in the literature review. The latter ends with conclusions based on which the PhD student formulates the objective of the current work – “Improving the effectiveness of treatment of patients using dental lasers”. For its implementation the following tasks have been set:

1. To monitor the healing process in surgical treatment of frenulums with dental lasers.
2. To monitor the healing process of wound surfaces in the surgical treatment of chronic periapical processes with dental lasers.
3. To monitor the healing process of wound surfaces in surgical treatment of alveolitis with dental lasers.

The material on which the current study has been conducted contains 116 patients for the period of 1 year (from 2021 to 2022). 52 of them (between 6 and 18 years old) have undergone frenulotomy, 28 of which with Er;Cr:YSGG laser and 24 with diode laser; 28 patients (aged 18-65 years) have undergone apicectomy with Er;Cr:YSGG laser and 36 patients (aged 18-65 years) have been treated for alveolitis with diode laser.

In the methods of the study the surgical protocols when performing frenulotomy, apicectomy and for the treatment of alveolitis with both types of lasers have been described. The specific characteristics for working with them have been stated. In the postoperative period the healing process of soft and/or bony tissues in all patients has been followed up by assessing various subjective and objective parameters. For analysis and interpretation of the obtained data the PhD student applies the following statistical methods: descriptive, alternative and variational analysis,

method for verification of hypotheses (t-test of Student Fisher and x2 test of Pearson), correlation analysis, regression analysis. For the statistical assessment of the data IBM SPSS software is used.

The results of the research indicate that the use of Er;Cr:YSGG laser for frenulotomy shows advantages over the diode laser in regard to the examined parameters: bleeding, epithelization, degree of positive perception of the intervention by pediatric patients. Lower levels of pain and functional disturbances have been established during all of the followed days. This gives grounds to the PhD student to recommend the Er;Cr:YSGG laser as a tool of choice when treating children. The favorable effect when performing apicectomy has been proven by the PhD student by following the subjective parameter in the postoperative period – minimal levels of pain, as well as objectively establishing minimal postoperative swelling. Also reported is the advantageous effect of the diode laser on bony and soft tissue regeneration processes in patients with alveolitis: good pain control, as well as a favorable effect in filling the empty alveolus with newly formed granulation tissue and epithelization. Each of the tasks has been discussed, based on which conclusions have been drawn. They are formulated according to the set tasks.

I allow myself to mention that the dissertation contains several repetitions and some stylistic errors.

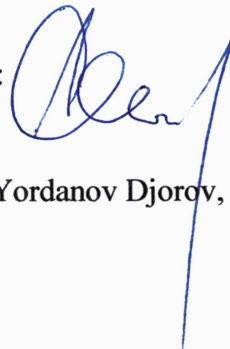
Dr. Velimira Georgieva presents contributions with confirmatory and original nature in her dissertation.

#### **4. Conclusion**

The presented for review dissertation work with subject “Application of dental lasers for treatment of patients in oral surgery” by Dr. Velimira Georgieva analyzes a current issue when treating patients in dentistry. It fulfills the accepted standards for acquiring the scientific degree “Doctor” according to the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its application of Medical University Varna. In conjunction with the forementioned and despite some remarks, I give my positive assessment and suggest that the Scientific Jury award the educational and scientific degree “Doctor” to Dr. Velimira Hristova Georgieva in the scientific specialty “Oral Surgery”

Sofia  
09.06.2022

REVIEWER:



Prof. Anton Yordanov Djorov, DMD, PhD, DSc